KPDES FORM SDAA

AI 101503

Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name: Mallie Coal Co. KYG046371

Location: State Rt. 6 just south of the intersection of Little Indian Ck. Rd.

County: Knox

Receiving Waters Impacted: Big Indian Creek

II. Socioeconomic Demonstration

1. **Define the boundaries of the affected community:**
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

This mine site if found approximately 18.0 miles NW of Barbourville at the headwaters of Big Indian Creek near the junction of Little Indian Creek and Big Indian Creek in Knox County, Kentucky. The immediate area is bounded by Whitley County two miles to the southwest and Laurel county found approximately 8.0 miles to the north.

2. **The effect on employment in the affected community:**
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

This mine site will employ 5 people for a period of from 5 to 10 years. The average wage will be $900.00 per person for a 40 hour work week which is $8,100.00 per week of capital gain for 5 families in this immediate area. This also will lead to numerous support jobs, which statistically shows that for every mining job created 3 support jobs area likewise created, in the surrounding areas of southeast Kentucky, north east Tennessee and southwest Virginia. As companies from these areas supply a variety of supplies and services from these areas to this mine. The current national unemployment average is 9.5%, the statewide average is *10.9% with the Knox County average at *12.1%. The jobs provided by this company, whom has several other mine sites in the near vicinity of this mine site lends to a host of better opportunities for this area of Whitley County, KY, such as increased revenues for local grocery stores, the housing market, and most other retail outlets.
*Sources: U.S. Census Bureau, Small Area Estimate Branch.

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:
(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

*The Knox County median household income recorded in 2007 was $24,881.00 which is less than half of the median income of the United States and only 60% of the State of KY statistics. These proposed jobs would provided those employed at this site with an average annual income of approximately $45,000.00 well above the overall average for this county and more on a par with the average across America. The project will not raise the overall median income of the county however mining jobs historically pay the highest wages in Knox County.

*Statistics derived from Average weekly Wages by Industry Division Covered by Unemployment Insurance: 2007, www.bls.gov.

4. The effect on tax revenues of the affected community:
(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

The expected revenues from just the employees alone would increase the county revenues by over $400,000.00 dollars per year, plus the increase expected from sales at the local retailers as well as the tax revenue from the coal mined and sold. The mine expects to have an average annual coal production of; 25,000 tons with an average selling price of $48.00 per ton which would provide for an income of $1,200,000.00.
The recoverable coal reserves are also taxed on a per ton basis for:
Federal Excise Tax: $1.10 / ton
Reclamation Tax: $0.15 / ton
KY Severance Tax: 4.5% of the net selling price which would average $2.21 per ton.
Tax on resources recovery would be approximately $3.46 per ton which would be on an average yearly production of 25,000 tons x $3.46 / ton = $86,500.00 in revenue for the State and Federal tax base. The average taxes would help the overall economy of Kentucky and the severance tax is returned to the county of production at the rate of 50% which would be a much needed help to the economy of Knox County

The negative impact of any mining operation is elevated noise levels, exposure to rather large truck traffic and elevated noise levels. The planned mining operation would at completion of mining increase the overall value of the land due to the fact that existing previous unreclaimed mine site would be reclaimed and the overall post-mining land use of this property would be of greater use than the pre-mining land use which was Abandoned Mine Land and scrub forest and inaccessible unusable steep terrain.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

The jobs provided by this company would increase the overall health of the employees in that health insurance would provide for better care than what being on public assistance could provide. There would not be a degradation of the environmental health of the community based on the fact that due to strict environmental controls placed on the coal company by the Federal and State oversight agencies noise, and dust pollution must be maintained within regulatory limits.

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The overall positive value of this mining operation would be the increase in well paying jobs over a sustained period of time, thereby reducing the overall poverty level of the County and increasing the overall income of the people of this area as well as the tax base for the County and Kentucky as a whole. The land of this site would be improved due to the strict reclamation guidelines for post-mining land use to re-grade the disturbed lands to the approximate original contour and to reseed all disturbed areas with beneficial vegetative species as well as planting of tree species native to the area. As noted this is a pre-law mine site with much of the area left unreclaimed from mining operations dating back to the 1950's, this mining operation at conclusion of mining would eliminate the these unreclaimed areas and return the land to a beneficial post-mining land use of Pasture Land.

III. Alternative Analysis

1. Pollution prevention measures:
(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

This mine site is designed to use sedimentation ponds to trap surface water run-off from the permit area to be retained for a period of time to allow the sedimentation to be filtered out of the water before it is released to public water ways. Reseeding of disturbed areas in a timely manner along with minimizing disturbed areas prior to mining will help reduce increased erosion and excessive siltation. It had been studied and considered to collect surface water run-off in sediment pond and then transferred to one holding tank for ease of access and either transported by truck or pipe line installed to the nearest water treatment plant located at Corbin, Ky. If maximum capacity of the Pond was experienced it would necessitate continual trucking 24/7 to haul the volume of 0.78 ac. feet or 254,166 gallons of water in a 24 hour period, or use water lines to a water treatment plant to treat this volume of water, which would have to be upgraded to treat this type of water. In both cases of alternative treatments would be in excess of hundreds of millions of dollars which would negate any beneficial capital gains from this mining operation.

2. The use of best management practices to minimize impacts:
(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

Best management guidelines of the Division of Water are implemented into the mine design of this permit application to minimize adverse impacts to the environment, these "BMP's" are :

- **Utilize diversion ditches to direct run-off to silt structures**
- **Re-grade and shape disturbed areas to a uniform post-mining slope**
- **Minimize surface disturbance whenever practicable**
- **Re-seed and mulch disturbed areas as soon as possible**
- **Placement of rip-rap in drainage areas to control erosion**
- **The use of sediment control techniques; such a strategic placement of hay-bales an silt fence in natural and man-made drainways.**

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:
(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

It is planned that this mining operation will use the water contained within the sediment control structure to control dust within the mine area by watering of the mine roadways, watering of reclaimed areas with the use of a hydro-seeder. After mining is complete the structures retained as permanent ponds will be used for watering of domestic livestock and also the native wildlife in the vicinity. The water can also be used for a source of agriculture water; i.e. watering of gardens, lawns, etc.

III. Alternative Analysis - continued

4. Application of water conservation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Primarily the use of any water contained within the silt structure of this mine site would be used for the mine site to control fugitive dust along roadways and to water re-seeded mine areas, also after mining this structure would be utilized by the landowners for a source of agriculture water, and for watering livestock. This supply of water could be shipped to the nearest water treatment facility at Corbin, KY whom would have to redesign their treatment plant at an estimated cost of approximately fifteen million dollars to be able to treat this type of water. The volume of water which would average 254,166 gallons daily would have to be transported to this site either by truck, which would require 50/ 1000 gal. tanker trucks with each transporting five loads each per day to haul the maximum of 254,166 gallons of water if this pond was at maximum daily capacity. The trucking cost would be 50 trucks at $50.00 per load times five loads per day would equal a daily trucking cost of $12,500.00 per day. Pipeline transportation would require at a minimum for construction thirty two dollars per foot with 4 pumping station at ninety thousand dollars each. The average pipeline installation would be; 10 miles x 5,280 feet = 52,800 feet x $32.00 / foot = $1,689,600 + $360,000.00 pumping stations = $2,049,600.00 + fifteen million dollars of plant upgrade = $17,049,600.00 for initial pipeline transportation infrastructure plus the yearly operating cost.

5 Alternative or enhanced treatment technology:
(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

The proposed cost for installation of water treatment facilities at this mine site, silt pond, is estimated to cost on average; $6,000.00 for one on bench pond. The alternative to these ponds is that there is none. The Department of Natural Resources and Office of Surface Mining requires under the SMCRA Law that silt structures be built to control surface water run-off. So alternatively the water could be removed from this pond and transported to the closest treatment facility for alternative treatment and or use. The cost of such would be:

Initial construction cost of the pond:

$6,000.00

Upgrade to the closest treatment facility;

$15,000,000

Truck transport of the water or pipeline transport respectively:

Trucks: daily cost: $12,500.00, weekly; $62,500.00, yearly; $3,250,000.

Pipeline: construction cost alone: $2,049,600 Total initial cost would be approximately; $20,000,000.00

Yearly cost would not be considered as the actual cost of alternative treatment installation would prohibit the mining operation from be completed.

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:
(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

Sediment structures are designed to hold a 10 year 24 hour storm event while allowing for settling time of sediment prior to discharge into the receiving streams to meet effluent discharge guidelines. Discharge from these structures is precipitation dependent and this structure is designed to safely impound and discharge runoff from the project area while limiting impact to public waterways. These structures are cost effective in relation to the overall mining operation. These ponds are monitored on a monthly basis to insure regulatory compliance and are treated as necessary to comply with regulations. The yearly cost for mine management of this pond is less than five hundred dollars per year. There are no available existing treatment systems within any geographic region of Kentucky that is equipped to handle the type of discharge from any given mine site. The cost for any alternative site for treatment of these waters would require a multimillion dollar investment that would not return the cost over the typical five year life span of this type of mining operation.

7. Seasonal or controlled discharge options:
(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The pond is to be used for this mine site is not designed for controlled releases, they are designed to control trapping efficiency of surface water run-off to allow sufficient time for sediment to filter out of the water before it discharges from the pond. Discharges occur after the pond has been filled to capacity a minimal discharge is allowed by the trapping efficiencies of the designed outlets; i.e. either an open spillway or pipe. As water discharges the volume of water in the pond is lowered below the effluent discharge levels with the cycle recurring as run-off fills each pond. The natural filtering system of nature such as vegetative cover and rock is removed in the mining and constructive process of these ponds which in effect replace the natural filtering system of nature with a man-made filtering system; the sedimentation pond.

III. Alternative Analysis - continued

8 Land application or infiltration or disposal via an Underground Injection Control Well

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

The maximum capacity of the designed ponds is 0.78 ac. feet or 254,166 gallons of water. Which the proven method and most cost effective method to date is the utilization of sediment ponds. The amount of water accumulated within this pond could not be discharge into a shallow or deep well in that the injection of this amount of water into the ground would destabilize the overlying strata to possibly causing landslide. The injection of this amount of water into any existing abandoned deep mine would first cause the proposed site to be permitted through the division of permits whom would require a demonstration that the induced water would not cause a possible blow out, such as the Martin County ordeal, thus impacting local housing, streams, people, livestock, etc. Environmental impact studies would be required, additional permitting actions, additional ponds being built, which in all would cost several hundred thousand dollars thus making the entire mining project un-feasible.

9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

There are no treatment facilities, public or private within any local or statewide geographic region of this mine site that has the design or capacity for treatment of over 250,000 gallons of surface water run-off. The water filtration plant local to this mine is either the city of Barbourville or the city of Corbin which are 18 and 10 miles respectively from this mine site. First it would be required to complete impact studies for the construction of pipeline to this site. The existing plants would have to be upgraded, water line installed, permits obtained for construction, easements obtained from private landowners and the design and final construction of the pipeline including the installation of at least four pumping stations, and in addition a holding pond at the treatment facility would have to be constructed to hold the daily in flow of water as the plant could not treat the water daily without storage. The estimated cost for such a venture would be:

Filing of required permits: $150,000.00
Pipeline construction:
10 miles; 52,800 feet x $32.00/ foot = $1.689,600.00
4 pumping stations @ $90,000.00 each = $360,000.00
Approximate total cost for infrastructure construction to a treatment facility: + $1,064,600.00

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Signature:	Jerry L Grant	**Date:**	**11-25-09**